

Evaluating the Influence of Nurse Navigators on Patient Satisfaction in High-Risk Pregnancies

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Author's Contribution

^{1,2}Substantial contributions to the conception or design of the work; or the acquisition, ^{4,6}Active participation in active methodology, ^{2,3}analysis, or interpretation of data for the work, ⁵Drafting the work or revising it critically for important intellectual content

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ABSTRACT

Objective: To assess the influence of nurse navigators on patient satisfaction and quality of care among women with high-risk pregnancies.

Methodology: This cross-sectional study was conducted at department of Obstetrics and Gynecology at Shalamar Medical and Dental College Lahore on 80 high-risk pregnant patients from February 2024 to August 2024. Patient's data were collected using a structured, pre-tested questionnaire covering demographic and clinical information, exposure to nurse navigators, perceived quality of care, and patient satisfaction across multiple domains. Responses were measured on a 5-point Likert scale. Data were analyzed using descriptive statistics to assess overall satisfaction with nurse navigators.

Results: Overall patients mean age was 28.6 ± 5.91 years. Based on satisfaction domains there was a high rating, with 70% satisfied with test explanations, 80% with responsiveness to questions, 70% with communication, and over 75% reporting excellent teamwork, comfort, and respect. Additionally 55% felt well informed and involved in care decisions, while 95% valued navigators' assistance in booking appointments and 85% acknowledged appropriate guidance about their condition as comparatively, before nurse navigators, only 20% rated care as excellent/very good, 20% as good, while 60% rated it fair or poor, demonstrating a clear improvement in quality of care and patient satisfaction. Overall satisfaction of patients with nurse navigators was found to be very high as among 85% rated their experience as excellent, while the remaining 15% rated it as good, reflecting a consistently positive perception of the nurse navigator services in the field of Obs & Gynae.

Conclusion: A significant role of nurse navigators observed in enhancing patient satisfaction among high risk pregnancies as patients reported high levels of satisfaction with the quality of communication, guidance, responsiveness, and coordination of care provided by nurse navigators, in the comparison to before the introduction of nurse navigators.

Keywords: High risk pregnancy, Nurse Navigator, Satisfaction.

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Introduction

Nurse navigators (NNs) are registered nurses who are trained to actively engage in the lives of patients with complex illnesses to provide patient-centered coordinated care reducing hospital admissions, exacerbations of

baseline state, and improve hospital utilization.¹ Furthermore, the role of the nurse navigators extends beyond direct patient care encompassing the addressal of social determinants of diseases and establishment of patient trust within the healthcare system.¹ The role of navigation models has been described since 2005, and

nurse navigator model was presented as an effective transition of the patient through the health system, improving health literacy, self-management, and accessibility to care.^{2,3}

Complex care management evaluation is a challenging task, as acute hospital services measure outcomes in episodes of care having a beginning and an end failing to capture the temporal relationship of care in chronic diseases.⁴ To determine the outcomes of NNs evaluation, primary outcomes have been characterized including reduced visits to the emergency department, reduction in hospital admissions and readmissions, reduced discharges against medical advice, and improved attendance at the out-patient appointments.^{3,4} Furthermore, to assess the direct impact of NNs on patient satisfaction patient surveys have been conducted with focus on assessment of barriers to care.⁵

Subsequently with the increasing number of high-risk deliveries each year, it becomes difficult for neonatologists and gynecologists to regularly interact with mothers and families to explain neonatal intensive care procedures or guide them on post-discharge home care.⁶ Therefore, nurse navigators act as the main point of contact, maintaining continuous communication with parents and families throughout hospitalization and even after discharge. They help reduce stress through comprehensive nursing approaches and family-centered support, enabling families to access healthcare services effectively and improve the mother and child's overall health outcomes.⁶

A high-risk pregnancy is one in which a medical or obstetric condition affecting the mother or fetus increases the likelihood of adverse maternal or fetal outcomes.⁷ According to the Centers for Disease Control and Prevention (CDC), approximately 65,000 women experience high-risk pregnancies each year in the United States, with the most common conditions being hypertensive disorders, postpartum hemorrhage (PPH), and deep vein thrombosis (DVT).⁸ In Pakistan, high maternal and neonatal mortality rates highlight that healthcare systems are often inadequately prepared to manage high-risk pregnancies.⁹ Although the overall incidence of high-risk pregnancies in the country is not well-documented, specific conditions such as hypertensive disorders in pregnancy and PPH have been reported at 9.3% and 34%, respectively.^{10,11}

Based on higher maternal and neonatal mortality rates in Pakistan and the limited integration of nurse navigator

programs in routine practice, it is critical to evaluate their impact on parental satisfaction and neonatal outcomes. The nurse navigator program implemented by the Shalamar Hospital has currently trained, 10 nurses with 2 of them currently performing duties in the obstetrics and gynecology clinic. The department of obstetrics and gynecology is planning to perform a prospective study aiming to evaluate, improve and compare the services provided by the NNs to previous data when the NN program was not implemented. However this study has been done to evaluate the effectiveness of nurse navigators in improving maternal and neonatal outcomes in high-risk pregnancies within a resource-limited healthcare setting in Pakistan by developing individualized KPIs, evaluating their impact on healthcare utilization, identifying barriers to care and social determinants of health, and providing recommendations to optimize the nurse navigator program at the obstetrics and gynecology department of Shalamar Hospital to enhanced quality of care and satisfaction among patients, which may explores the effective nursing strategies tailored to the local healthcare context, provide evidence to guide policy and practice, and ultimately contribute to improved maternal and child health outcomes.

Methodology

This cross-sectional descriptive study was carried out at department of Obstetrics and Gynecology at Shalamar Medical and Dental College Lahore. Study was done during 6 months from February 2024 to august 2024. All the women during pregnancy aged 18 years and above identified as high-risk according to hospital protocols like gestational diabetes, preeclampsia, multiple pregnancies, prior cesarean sections, or other complications) and who underwent C-sections or SVD had interacted with nurse navigators during their hospital stay or outpatient visits were included. All the un-booked women with low-risk pregnancies, shifted ICU due to severe critical condition or other severe complication and those who were not willing to take a part of study were excluded. A sample size of 80 patients was determined based on feasibility, patient availability, using convenience sampling technique. After obtaining ethical approval from the ERC committee Ref no. SMDC-IRB/AL/2024-009, eligible patients were approached during their hospital stay or at outpatient follow-up visits. The purpose of the study was carefully explained to all participants, and written informed consent was obtained prior to enrollment, to ensure validity and minimize response

bias, the questionnaires were administered by trained research assistants, who were instructed to clarify any doubts and guide patients through the process without influencing their responses. All the patients were assessed by the predesigned and structured questionnaire to assess patient satisfaction with nurse navigators. The questionnaires were filled in a quiet and private setting within the hospital premises to promote comfort and openness and respondents were given adequate time to reflect and respond to each question. Patients were also assured that their responses would remain confidential and anonymous, and that participation was entirely voluntary with no impact on the care they were receiving.

In the questionnaire basically focused on patient satisfaction domains related to nurse navigators, including the clarity of communication and explanations about tests, responsiveness and availability, guidance in decision-making and understanding for high risk pregnancy, respect, friendliness, and support, as well as coordination of care such as assistance with booking appointments, teamwork with other healthcare providers, ensuring privacy, and post-discharge support. Additionally, the overall satisfaction score was computed to measure of patient satisfaction with each item was rated using a five-point Likert scale, with total possible scores ranging from 19 to 95; where the lower scores indicated higher satisfaction and the scale was defined as 1 = Excellent, 2 = Very Good, 3 = Good, 4 = Fair, and 5 = Poor. All the relevant information was entered and analyzed using SPSS version 26.

Results

Overall 88 patients were incorporated, with an overall mean age of 28.6 ± 5.91 years and the majority underwent a C-section 73.8%, while only 26.3% delivered normally. Based on the prior hospitalization history during pregnancy, 60% of patients had been admitted only once, 35% had been hospitalized twice, while only 5% reported three to four admissions and hospital stay arrangements, shown in table I.

According to the questionnaire-based information the most of the patients expressed high satisfaction with the services of nurse navigators as the majority rated the nurses as excellent in explaining test preparations (70%), answering questions (80%), and communicating with patients, families, and doctors (70%). Around >50% felt well informed about their condition (55%) and appreciated being given choices in their care (55%). The

respect and privacy were also well maintained, with most responses ranging between excellent and very good, while in terms of responsiveness, comfort, and teamwork with other hospital staff, three-quarters or more of patients reported excellent satisfaction. Around 95% acknowledged the role of navigators in booking appointments, and 85% felt their condition was understood and appropriately guided. Generally the findings indicated that the nurse navigators significantly contributed to enhancing the quality of care and satisfaction of the patients as shown in table II.

Table I: Mean age clinical information of patients. (n=80)

Variables	Statistics	
Age in years	(Mean \pm SD)	28.60 \pm 5.91 years
Mode of delivery	Normal	21 26.3
	C-Section	59 73.8
Priors hospitalization history	Only once	48 60.0
	Twice	28 35.0
	3 to 4 times	04 05.0
For most of your hospital stay, were you in a room	By yourself	16 20.0
	With 1 other person	48 60.0
	With more than 1 other person	16 20.0

Based on the before the introduction of nurse navigators, only 10% of patients rated the quality of care as excellent and another 10% as very good, around 20% considered it good, and the majority of the cases 50%, described the quality of care as only fair, while 10% of patients perceived the care as poor, which overall indicating that the most patients were not fully satisfied with the quality of care before the introduction of nurse navigators. (Figure 1)

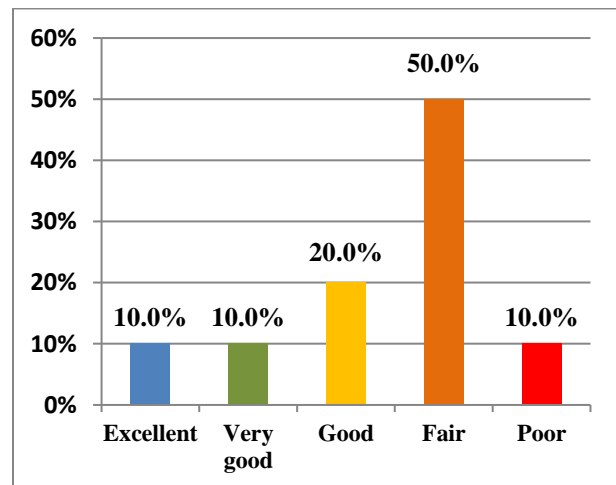


Figure 1. Before the nurse navigators the quality of care was?

Table II: Questioner based information for Nurse Navigators for satisfaction of the patient.

Questions	Excellent	Very good	Good	Fair	Poor
How well nurses explained how to prepare for tests	56 (70.0%)	24 (30.0%)	--	--	--
Willingness of nurses to answer your questions	64 (80.0%)	16 (20.0%)	--	--	--
How well nurses communicated with patients, families, and doctors	56 (70.0%)	24 (30.0%)	--	--	--
How well nurses kept them informed about your condition and needs	44(55.0%)	32 (40.0%)	4(5.0%)	--	--
How much they were allowed to help in your care?	56 (70.0%)	20 (25.0%)	4 (5.0%)	--	--
Courtesy and respect you were given; friendliness and kindness	40 (50.0%)	40 (50.0%)	0 (0.0%)	--	--
How often nurses checked on you and how well they kept track of how you were doing	52 (65.0%)	28 (35.0%)	0 (0.0%)	--	--
How much nurses ask you what you think is important and give you choices	44 (55.0%)	32 (40.0%)	4 (5.0%)	--	--
Willingness of the nurses to be flexible in meeting your needs	64 (80.0%)	8 (10.0%)	0 (0.0%)	4(5.0%)	--
Ability of the nurses to make you comfortable and reassure you	68 (85.0%)	12 (15.0%)	0 (0.0%)	--	--
How quick were they to respond to your queries?	52 (65.0%)	28 (35.0%)	4 (5.0%)	--	--
How well things were done, like giving medicine and handling IVs	56 (70.0%)	20 (25.0%)	0 (0.0%)	--	--
The teamwork between nurses and other hospital staff who took care of you	60 (75.0%)	16 (20.0%)	4 (5.0%)	--	--
Provisions for your privacy by nurses	56 (70.0%)	24 (30.0%)	0 (0.0%)	--	--
How clearly and completely nurses told you what to do and what to expect when you left hospital or once you have completed OPD visit	36 (45.0%)	44 (55.0%)	0 (0.0%)	--	--
Nurses' efforts to provide for your needs after you left hospital	60 (75.0%)	16 (20.0%)	4 (5.0%)	--	--
The teamwork between nurses and other hospital staff who took care of you	60 (75.0%)	16 (20.0%)	4 (5.0%)	--	--
Provisions for your privacy by nurses	56 (70.0%)	24 (30.0%)	0 (0.0%)	--	--
How clearly and completely nurses told you what to do and what to expect when you left hospital or once you have completed OPD visit	36 (45.0%)	44 (55.0%)	0 (0.0%)	--	--
Nurses' efforts to provide for your needs after you left hospital	60 (75.0%)	16 (20.0%)	4 (5.0%)	--	--
Do nurse navigators help in booking appointments?	76 (95.0%)	4 (5.0%)	0 (0.0%)	--	--
Have the nurse navigators understood the severity of your condition appropriately and guided you accordingly?	68 (85.0%)	8 (10.0%)	4 (5.0%)	--	--

In this study the majority of patients (60%) had exposure to nurse navigators for less than one month, (10%) reported knowing them for 1–2 months, while nearly one-third (30%) had interacted with nurse navigators for more than two months as shown in figure 2.

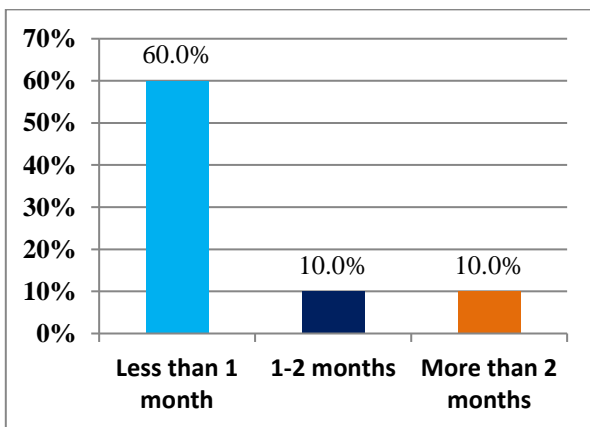


Figure 2. How long have you know the nurse navigators?

In this study the overall satisfaction of patients with nurse navigators was found to be very high as among 85% rated their experience as excellent, while the remaining 15% rated it as good, while no any patient reported poor satisfaction, reflecting a consistently positive perception of the nurse navigator services in the field of gynae and OBS. (Figure 3)

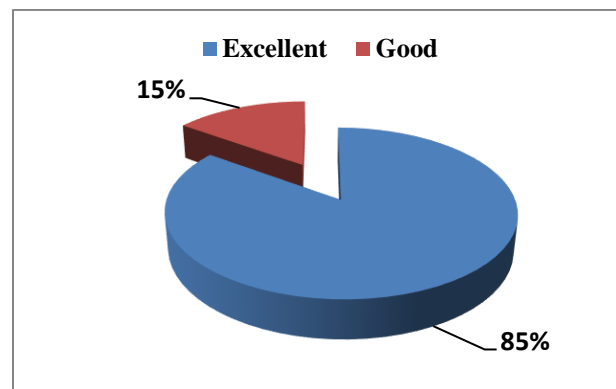


Figure 3. Overall satisfaction of the patients. (n=80)

Discussion

High-risk pregnancies present distinct challenges that require specialized management to optimize maternal and neonatal outcomes while healthcare providers must also navigate resource limitations, time pressures, and the balance between medical interventions and patient autonomy. Delivering effective care requires close collaboration among obstetricians, midwives, nurses, and other professionals to ensure comprehensive and individualized support for expectant mothers. However the Nurse navigation has emerged as an essential approach in many healthcare settings, serving as a growing trend to enhance patient satisfaction, reduce the barriers to care and improve the feto-maternal outcomes. Present study was conducted to evaluate the influence of nurse navigators on patient satisfaction and quality of care among 88 women with high-risk pregnancies, with a mean age of 28.6 ± 5.91 years, the majority of whom (73.8%) underwent C-section. These findings are supported by other studies, as Ashraf V et al¹² reported the maternal mean age as 28.1 ± 3.49 years in high-risk pregnancies, while Avesi K et al¹³ consistently found a mean age of 29.12 ± 5.46 years of women with high risk pregnancies.

In this study, the majority of patients reported high satisfaction with nurse navigators, with 70% rating them excellent in explaining test preparations, around 80% in answering questions, and 70% in communication with patients and families. Over half felt well informed about their condition (55%) and appreciated being given care choices (55%). Respect and privacy were well maintained, with most responses rated excellent or very good. In terms of responsiveness, comfort, and teamwork, over 75% reported excellent satisfaction. Additionally, 95% acknowledged navigators' role in booking appointments, and 85% felt their condition was well understood and appropriately guided, indicating that nurse navigators played a significant role in improving both quality of care and patient satisfaction. In aligns to this study Ye Z et al¹³ conducted the study on high-risk pregnancies evaluated the impact of integrating staged nursing with nutritional interventions compared to routine care among 96 women. Results showed that those receiving the combined approach had shorter labor durations and fewer adverse outcomes, demonstrating that this model improves maternal nutrition and enhances childbirth safety.¹³ In the comparison of this study Siva N et al¹⁴ observed in their review article the Neonatal Nurse Navigator program is a cost-effective model that supports

mothers of high-risk neonates during NICU admission and after discharge by addressing their needs, ensuring continuity of care, and providing timely guidance and psychological support.¹⁴ On the other hand the Öztoprak PU et al¹⁵ conducted a study in Turkey on 64 primiparous women (≥ 36 weeks) and found that navigation program-based nursing care, which included home visits, phone calls, and text messages in addition to routine care, significantly improved maternal health compared to standard hospital care. In the study by Huttu MH et al¹⁶ concluded that the to evaluate a risk assessment and nursing telephonic case management protocol for high-risk mothers and infants, and reported that the managed care organization (MCO) program effectively reduced costs while improving maternal and infant outcomes. In the comparison of this study Harris SA et al¹⁷ review of 19 articles covering 13 PMH patient navigation programs for parents from conception to five years postpartum revealed both commonalities and variations in settings, target groups, and navigator roles. Although findings suggest potential benefits for clinical outcomes and service use, the overall evidence remains limited.¹⁷ In this study we assessed the patients experience on the before the introduction of nurse navigators, where only 10% of patients rated the quality of care as excellent and another 10% as very good, around 20% considered it good, and the majority of the cases 50%, described the quality of care as only fair, while 10% of patients perceived the care as poor, which overall indicating that the most patients were not fully satisfied with the quality of care before the introduction of nurse navigators. Additionally in this study the overall satisfaction of patients with nurse navigators was found to be very high as among 85% rated their experience as excellent, while the remaining 15% rated it as good, while no any patient reported poor satisfaction, reflecting a consistently positive perception of the nurse navigator services in the field of gynae and OBS. In the parallel of this study Oh J et al¹⁸ conducted the study on cancer screening patients where they reported the Nurse navigators enhance cancer patient outcomes by facilitating timely care and have substantial potential to improve completion rates of cancer care services as well as overall patient satisfaction. However to the best of our knowledge, no previous study has specifically evaluated patient satisfaction among obstetrics and gynecology patients following the intervention of a nurse navigator using different questionnaire based domains for satisfaction. Although a few studies have highlighted the significant positive role of nurse navigators without questioner domains, hence

this study adds novelty to the field of gynecology but unfortunately it also carries few significant limitations, including a small sample size, lack of a control group, and the absence of assessment of feto-maternal outcomes. However to strengthen and validate this initiative, larger-scale studies with more robust designs are recommended. Implementation of such programs is strongly encouraged, as nurse navigation is known to enhance feto-maternal health and patient satisfaction. This is particularly relevant in settings where patients often report difficulties in hospital communication and the lack of friendly, guided treatment pathways.

Conclusion

Study revealed that there was a significant role of nurse navigators observed in enhancing patient satisfaction among high risk pregnancies as patients reported high levels of satisfaction with the quality of communication, guidance, responsiveness, and coordination of care provided by nurse navigators. Most of respondents rated their overall experience as *excellent*, with particularly strong appreciation for assistance in appointment booking, understanding their condition, and ensuring continuity of care during and after hospitalization. In comparison to before the introduction of nurse navigators, with the quality of care was perceived as fair after involvement, patient experiences improved markedly, indicating a direct positive influence on healthcare delivery and outcomes. Hence, the nurse navigation observed to the effective strategy to improve not only clinical support but also the overall care experience of women with high-risk pregnancies. Generally the integrating nurse navigators into maternal healthcare systems could therefore contribute to better patient satisfaction, improved trust in healthcare services, and potentially better health outcomes among high risk pregnancies. However, due to several significant limitations, further large-scale research work is recommended to strengthen and validate this initiative, particularly at the local level.

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